

## CLAIMS

### WHAT IS CLAIMED IS:

- 1           1. A method of electrically and optically testing a planar lightwave circuit  
2           comprising:  
3                 placing the planar lightwave circuit on a test fixture, the test fixture  
4                 including a printed circuit board;  
5                 electrically coupling the printed circuit board to the planar lightwave circuit;  
6                 electrically coupling the printed circuit board to a tester;  
7                 optically coupling the planar lightwave circuit to the tester; and  
8                 performing electrical and optical testing on the planar lightwave circuit.
- 1           2. The method of claim 1, further comprising:  
2                 holding the planar lightwave circuit in place using a vacuum.
- 1           3. The method of claim 1, wherein electrically coupling the printed circuit board  
2           to the planar lightwave circuit further comprises:  
3                 soldering wires from the printed circuit board to the planar lightwave circuit.
- 1           4. The method of claim 3, wherein electrically coupling the printed circuit board  
2           to a tester further comprises:

3           attaching an electrical connector to the printed circuit board, the electrical  
4           connector coupled to the tester via a ribbon cable.

1           5. The method of claim 1, wherein electrically coupling the printed circuit board  
2           to the planar lightwave circuit further comprises:  
3           wirebonding wires from the printed circuit board to the planar lightwave  
4           circuit.

1           6. The method of claim 5, wherein electrically coupling the printed circuit board  
2           to a tester further comprises:  
3           attaching an electrical connector to the printed circuit board, the electrical  
4           connector coupled to the tester via a ribbon cable.

1           7. The method of claim 1, wherein electrically coupling the printed circuit board  
2           to the planar lightwave circuit further comprises:  
3           using a conductive epoxy and wires to electrically couple the printed circuit  
4           board to the planar lightwave circuit.

1           8. A test fixture comprising:  
2           a first area for placing a printed circuit board;  
3           a second area for placing a hybrid PLC, the second area having one or more  
4           holes coupled to a vacuum cavity;  
5           a vacuum interface to provide suction in the vacuum cavity.

- 1 9. The test fixture of claim 8 further comprising:  
2 an attachment interface for holding the printed circuit board in place.
- 1 10. The test fixture of claim 9 further comprising:  
2 a clamp to hold the printed circuit board to the test fixture.
- 1 11. The test fixture of claim 8 further comprising:  
2 an attachment interface for holding the hybrid PLC to the test fixture.
- 1 12. The test fixture of claim 8 further comprising:  
2 a clamp to hold the hybrid PLC to the test fixture.
- 1 13. A test fixture comprising:  
2 a vacuum interface for providing suction to an inner cavity of the test fixture,  
3 the inner cavity coupled to an outer surface through one or more holes;  
4 a mounting area for holding a hybrid planar lightwave circuit, wherein the  
5 one or more holes are within the mounting area; and  
6 a printed circuit board having a first interface for coupling to a tester  
7 connector and a second interface for coupling to the hybrid planar  
8 lightwave circuit.
- 1 14. The test fixture of claim 13 further comprising:  
2 clamps to hold the printed circuit board to the test fixture.

1           15. The test fixture of claim 13, wherein the second interface of the printed circuit  
2 board comprises wire bond interfaces.

1           16. The test fixture of claim 13, wherein the second interface of the printed circuit  
2 board comprises electrical pads for soldering.

1           17. The test fixture of claim 13, wherein the inner cavity is split into two or more  
2 vacuum channels.

1           18. The test fixture of claim 17, wherein the two or more vacuum channels are  
2 substantially parallel.